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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/811,179 | 03/26/2004 | Naoki Katayama | 004553.108040 | 2023 |
| 29540 | 7590 | 02/23/2006 | EXAMINER | |
| PITNEY HARDIN LLP | | | UHLENHAKE, JASON S | |
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DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 10/811,179 | Applicant(s) KATAYAMA, NAOKI | |
| | Examiner Jason Uhlenhake | Art Unit 2853 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 10-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 4, 6-9 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>03/26/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura et al (U.S. Pat. 6,386,672).

Kimura et al discloses:

- ***regarding claim 1***, recording apparatus comprising: a printing head which has a plurality of recording elements and performs recording on a recording medium; head holder (case) which holds the printing head (Column 1, Lines 64 – 67; Column 2, Lines 1 – 11)
- on outer side of head holder a flexible insulating band; plurality of conductive wires; and a driver element for actuating the printing head, the conductive wires and the driver element being disposed on the flexible insulating band (Column 3, Lines 61 – 67; Column 4, Lines 1 – 17)
- a heatsink (18) which is disposed between the flexible wiring board (13) and the head holder (11) and releases heat generated by the driver element (Figure 4; Column 4, Lines 39 – 48)
- ***regarding claim 5***, the heatsink comprises a first portion disposed between the flexible wiring board and the head holder and a second portion extending from an edge of the

first portion into a space other than between the flexible wiring board and the head holder
(Figure 4)

- **regarding claim 14**, a portion of the surface of the heatsink (18) to be opposed to the head holder (11), which portion comprises a first area corresponding to the driver element (20) and a second area surrounding and adjacent to the first area, is not in contact with the head holder (11) (Figure 4)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al (U.S. Pat. 6,86,672) in view of Orlicki et al (U.S. Pat. 5,818,499).

Kimura et al discloses:

- **regarding claim 2**, surface of the flexible wiring board (13) on which the driver element (20) is disposed, opposite the heatsink (18), at a position corresponding to a positioning the surface where the driver element (20) is disposed (Figure 11)

Kimura et al does not disclose expressly:

- **regarding claim 2**, the heatsink is directly held in close contact with a surface of the flexible wiring board

Orlicki et al discloses:

- **regarding claim 2**, the heatsink (40) is directly held in close contact with a surface of the flexible wiring board (42) (Figure 8; Column 3, Lines 57 – 60), for the purpose of dissipating heat from the flexible wiring board.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the heatsink is directly held in close contact with a surface of the flexible wiring board as taught by Orlicki et al into the device of Kimura et al. The motivation for doing so would have been to dissipate the heat from the flexible wiring board.

Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al (U.S. Pat. 6,86,672) as modified by Orlicki et al (U.S. Pat. 5,818,499) as applied to claim 1 above, and further in view of Yamada et al (U.S. Pub. 2002/0105567).

Kimura et al as modified by Orlicki et al discloses all of the claimed limitations except for the following:

- **regarding claim 3**, the heatsink is spaced from the outer surface of the head holder with a first clearance there between

- **regarding claim 12**, a cover which protects the flexible wiring board; and an elastic member provided between the driver element and the cover, the driver element being pressed to the heatsink via the flexible wiring board, by pressing force of the elastic member

Yamada et al discloses:

- **regarding claim 3**, the heatsink is spaced from the outer surface of the head holder with a first clearance there between (Figure 3), for the purpose of allowing space for the flexible wiring board and for heat to properly dissipate.

- **regarding claim 12**, a cover which protects the flexible wiring board; and an elastic member provided between the driver element and the cover, the driver element being pressed to the heatsink via the flexible wiring board, by pressing force of the elastic member (Paragraph 0064), for the purpose of discharging heat.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the heatsink is spaced from the outer surface of the head holder with a first clearance there between; a cover which protects the flexible wiring board; and an elastic member provided between the driver element and the cover, the driver element being pressed to the heatsink via the flexible wiring board, by pressing force of the elastic member as taught by Yamada et al into the device of Kimura et al as modified by Orlicki et al. The motivation for doing so would have been to allow space for the flexible wiring board and for heat to properly dissipate and for the purpose of discharging heat.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al (U.S. Pat. 6,86,672) in view of Sattler (U.S. Pat. 6,095,701)

Kimura et al discloses all the claimed limitations except for the following:

- **regarding claim 10**, a carriage which is movable in a direction substantially parallel to the recording medium, and wherein the heatsink has a planar surface substantially parallel to a direction of movement of the carriage

Sattler discloses:

- ***regarding claim 10***, a carriage which is movable in a direction substantially parallel to the recording medium, and wherein the heatsink has a planar surface substantially parallel to a direction of movement of the carriage (Figure 1; Column 5, Lines 5 – 20), for the purpose of ensuring precise and high quality printing.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a carriage which is movable in a direction substantially parallel to the recording medium, and wherein the heatsink has a planar surface substantially parallel to a direction of movement of the carriage as taught by Sattler into the device of Kimura et al. The motivation for doing so would have been to ensure precise and high quality printing.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al (U.S. Pat. 6,86,672) in view of Yamada et al (U.S. Pub. 2002/0105567)

Kimura et al discloses all the claimed limitations except for the following:

- ***regarding claim 11***, a cover which protects the flexible wiring board; and an elastic member provided between the driver element and the cover, the driver element being pressed to the heatsink via the flexible wiring board, by pressing force of the elastic member

Yamada et al discloses:

- ***regarding claim 3***, the heatsink is spaced from the outer surface of the head holder with a first clearance there between (Figure 3), for the purpose of allowing space for the flexible wiring board and for heat to properly dissipate.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a cover which protects the flexible wiring board; and an elastic member provided between the driver element and the cover, the driver element being pressed to the heatsink via the flexible wiring board, by pressing force of the elastic member as taught by Yamada et al into the device of Kimura et al. The motivation for doing so would have been to allow the discharging of heat.

Allowable Subject Matter

Claims 4, 6 – 9, 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for indicating allowable subject matter of claim 4 is the inclusion of the limitation of a recording apparatus that includes a first clearance that is open to the atmosphere in its opposite ends in a direction of movement of the printing head. It is this limitation found in the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for indicating allowable subject matter of claims 6 – 9, 13 is the inclusion of the limitations of a recording apparatus that includes a relay circuit board to which the flexible wiring board is connected is disposed on the outer side of a second wall with a space there between; and first portion of the heatsink extends from the vicinity of a connecting portion where the edge of the first wall and an edge of the second wall are connected, while the second

portion of the heatsink extends into a space between the relay circuit board and the head holder. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSU

February 24, 2006



 2/06
K. FEGGIN
PRIMARY EXAMINER